

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RX03P04USPCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/002738	International filing date (day/month/year) 04.03.2004	Priority date (day/month/year) 31.03.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>6</u> sheets, as follows: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4.	This report contains indications relating to the following items: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-2, 6-19 as originally filed/furnished
- pages* 3-5 received by this Authority on 11.07.2005
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 4 as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 3, 8-12 received by this Authority on 11.07.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1-4 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 1, 2, 5-7
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	3, 4, 8-12	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	3, 4, 8-12	NO
Industrial applicability (IA)	Claims	3, 4, 8-12	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 1-117303 A (Taiyo Yuden Co., Ltd.), 10 May 1989, entire text			
Document 2: JP 2001-135511 A (Sumitomo Special Metals Co., Ltd.), 18 May 2001, paragraphs [0022] to [0026]; [0045] to [0047]			
Document 3: JP 61-170565 A (Fujitsu Limited), 1 August 1986, entire text; fig. 3			
Document 4: JP 2002-260942 A (Sumitomo Special Metals Co., Ltd.), 13 September 2002, entire text; all drawings			
Claims 3, 4 and 8 to 12			
<p>Document 1 sets forth a permanent magnet, wherein Tb and Dy are diffused in the proximity of the surface of an R-Fe-B sintered magnet to provide a layer with a higher inherent coercive force than inside the magnet; and with a sintered body as an anode, sputtering is carried out with Dy metal as a cathode target to form a Dy thin-film layer, then the sintered body having a thin-film layer is subjected to heat treatment. The value for BHmax at the front is also disclosed.</p>			
<p>Document 2 sets forth a minute Nd-Fe-B sintered magnet which has been surface coated, wherein when the</p>			

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shape of the Nd-Fe-B sintered magnet has a surface area of $S\text{mm}^2$ and a volume of $V\text{mm}^3$, the value for S/V preferably falls within the range of 2mm^{-1} to 20mm^{-1} ; and a shape such as a ring with a hole inside is formed by machining a large blank.

Newly cited document 4 sets forth a unit which rotatably supports suspending members (8) in order to suspend ring-shaped bonded magnets (30) as 8 holding members on a rotatably supporting member (7) around a rotating shaft (6) in a horizontal direction; and a feature wherein an inorganic coating is vapor-deposited on the surface of an Nb-Fe-B bonded magnet.

In addition, as described in document 3, a sputtering device using an opposing target is a known feature.

In addition, it would be easy for a person skilled in the art to conceive of machining a surface-treated R-Fe-B sintered magnet into a ring-shape as set forth in document 2 as an alternative to the shape of the R-Fe-B sintered body set forth in document 1, to constitute a minute shape having a predetermined S/V value; and to apply the configuration of the vapor deposition device set forth in document 4 and known features to the device to carry out sputtering set forth in document 1.

In addition, in the light of the fact that in the invention set forth in document 1, a large quantity of Dy is segregated the inner part of the magnet to 50μ inside the magnet surface, and that the invention has the same BH_{max} value as the invention of this application, it is understood that R metal has permeated to the same depth

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as the invention of this application.

In addition, determining whether to carry out diffusion metallizing while film-forming at a high temperature, or to carry out diffusion metallizing after carrying out heat treatment after film-forming, would merely constitute a design feature which a person skilled in the art could accomplish as necessary.